

## CLAIMS

1. A continuously variable transmission device of the type having planetary members in rolling contact with radially inner and outer races each comprising axially spaced relatively axially movable parts, and control means for determining the axial separation of the parts of one of the two races, in which the planets are connected for drive transmission to an input or output member of the transmission device by connection means which allows the radial position of the planets to vary in response to variation in the axial separation of the parts of the said one of the two races, and in which the generatrix of the curved surface of at least one of the races and/or the planets is non-circular.  
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2. A continuously variable transmission device according to Claim 1, in which the generatrix of the curved surface of at least one of the races and/or the planets is discontinuous.  
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3. A continuously variable transmission device according to Claim 1 or Claim 2, in which at least part of the generatrix of the curved surface of a least one of the races and/or the planets is a volute, involute or evolute curve.  
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4. A continuously variable transmission device according to any of Claims 1 to 3, in which at least one part of the generatrix of the curved surface of at least one of the races and/or the planets is more sharply curved than at least one other part.

5. A continuously variable transmission device according to Claim 1 or Claim 2, in which the said control means include two adjustment members interengaged by helical interengagement means such that relative turning motion of one of the adjustment members results in relative axial displacement between the two adjustment members.

6. A continuously variable transmission device according to any preceding claim, in which the connection means between the planets and a planet carrier comprises a connector plate having a plurality of slots, having at least a radial component, within 10 each of which a part of a respective planet is engaged.

7. A continuously variable transmission device according to Claim 6, in which the said slots are inclined to a radial line passing through the slot in such a way as in use to apply or have applied thereto a force having both a radial and a circumferential 15 component.

8. A continuously variable transmission device according to any preceding claim, in which the said radially inner and outer races are located within a fixed housing and one or other of the said races is rotatable with respect to the housing by the input or 20 output shaft of the transmission device.

9. A rolling contact continuously variable transmission device according to any preceding claim, characterised by having a fixed ratio epicyclic gear in the drive train to its output drive member and/or from its input drive member.

10. A continuously variable transmission device according to any preceding claim  
in which the two parts of the radially outer race and/or the radially inner race are  
interconnected by means of a helical coupling, with rolling elements between the two  
5 parts to reduce friction.